PROJECT 10 OVERVIEW

Expand, Improve, and Coordinate Safety Data Analysis

BACKGROUND

Research professionals, worldwide, analyze safety data to assess the extent, investigate the circumstances, and determine the causes of transportation-related deaths and injuries. The results of their analyses inform the selection, development, and implementation of safety policies and specific countermeasures for hazards in all modes of transportation.

Although data analysis is essential for the formulation, implementation, and evaluation of transportation safety countermeasures and policies, improvements are needed:

- Resources for safety analysis and evaluation are presently insufficient, apparently because of a decline in recognition of data analysis as a tool for improving transportation safety.
- Data analysis methods and proficiency levels are diverse, without generally accepted standards for either the application of these methods or the evaluation of their adequacy.
- Fora for intermodal interchange of safety research methods, analysis tools, and information on best practices for improving safety data analysis do not presently exist.

These deficiencies currently constrain the processes of discovery and evaluation required to optimize the productivity of transportation safety research. The constraint has an adverse impact on the potential effectiveness of transportation safety programs.

Goal

The goal of this project is to increase the extent to which analyses of transportation safety data help to save lives and prevent injuries from hazards in all transportation modes . Achieving this goal requires improvements in the development, application, and assessment of methods for analyzing transportation safety data and for applying the results of this analysis to enhance transportation safety policies and programs.

Objectives

This project has two specific objectives in order to accomplish the goal.

Report on Transportation Safety Data Analysis

The team will produce a report that will:

- Inventory data analysis tools and analytic expertise currently employed by organizations and individuals conducting safety research for each transportation mode.
- Assess the current status of:
    - Data analysis by public organizations, private organizations, and individuals that conduct

highway, aviation, rail, marine, and pipeline safety research or formulate and enforce transportation safety policy.
    - Tools used to identify and measure the consequences of causes and circumstances of transportation-related deaths and injuries for each mode of transportation.
    - Best practices and lessons learned within organizations and by individuals conducting and applying the results of safety research for each of the transportation modes.
    - Resources needed to support the analysis of safety data to improve the effectiveness of transportation safety programs.
- Recommend standards, technologies, training, evaluation, and other requirements to improve safety data analysis capabilities for each mode.
- Recommend venues and protocols for interchanges of safety data analysis best practices and lessons-learned.

Intermodal interchanges of information on data analysis

The team will formulate a strategy for program development and coordination of fora, training, and other options for information exchanges on data analysis efforts, statistical and other analysis tools, best practices and lessons-learned, impacts, and resource requirements.

The Working Team

The initiative to improve and expand safety data analysis will be accomplished by a team BTS established through its Safety Data Initiative. Participants represent all DOT modes as well as principal public and private organizations involved in sponsorship, conduct, or application of transportation safety research.

Technical support is provided to the team by BTS and the U.S Department of Transportation Volpe National Transportation Systems Center (Volpe Center).

TASKS

To achieve its objectives, the team will accomplish the following tasks:

- identify leaders in transportation safety research,
- conduct a transportation safety data analysis survey,
- construct an inventory of analysis methods,
- develop a DOT safety data analysis improvement plan,
- formulate an outreach strategy, and
- produce the Transportation Safety Data Analysis Report.

Leaders in Transportation Safety Research

The team will identify leaders in transportation safety research worldwide and establish mechanisms for their involvement in this project.

Transportation Safety Data Analysis Survey

The team will conduct a survey to acquire information on needs and requirements for

safety data analysis, analysis methods, and best practices by organizations and individuals involved in safety research in all transportation modes.

With support from BTS, the Volpe Center, and NIOSH, the working team will:

- develop the survey methodology and questions,
- identify respondents (e.g., program managers, principal investigators and technical experts in safety research for each transportation mode),
- coordinate execution of the survey in their respective organizations,
- code the data and analyze the findings, and
- develop summary of findings.

The team will summarize the survey methodology and findings in the Transportation Safety Data Analysis report.

Analysis Methods Inventory

The survey findings will include information on the application of data analysis methods for transportation safety research. The working team will:

- compile a list of the methods used for safety research in each mode;
- develop a bibliography of transportation safety research studies that use these methods;
- identify analysis resources, including personnel, facilities, instrumentation and equipment for the employment of these methods; and
- identify critical research issues, and strategies for their resolution.

This inventory will be included as an appendix in the Transportation Safety Data Analysis report.

DOT Safety Data Analysis Improvement Plan

For each mode of transportation, the team will identify and evaluate:

- strengths and weakness of safety data analysis applications and practices,
- best safety data analysis practices,
- resource needs for safety data analysis, and
- lessons learned from the application of safety analysis methodologies and practices.

Based on this information, the working team will develop a plan for improving safety data analysis in the Department of Transportation. The plan will include performance standards, recommendations for developing new analytic methodologies, recommendations for technology applications, best practices and benchmarking, and training guidelines. This plan will be includeed in the Transportation Safety Data Analysis report.

Outreach Strategy

The team will develop a strategy for outreach to foster improvements in transportation safety data analysis. The strategy will involve objectives and guidelines for:

- sponsorship of a safety data analysis "strike force,"
- development of presentations for national and international conferences and other meetings,
- curriculum for a safety risks and costs analysis and management short course, and
- a website and publication program.

The team will present the outreach strategy in the Transportation Safety Data Analysis report.

Transportation Safety Data Analysis Report	The team will assemble and edit the information developed in Tasks 1 through 5 to produce the Transportation Safety Data Analysis report.